
IMPROX AC

ImproX AC Controller

INTRODUCTION

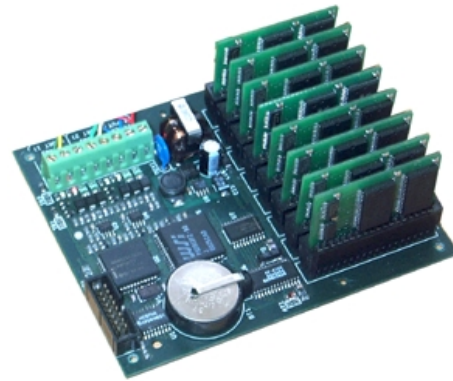
The ImproX AC Controller forms part of the ImproX family of access control equipment and is fully compliant with the ImproNet System. This Controller is capable of increased tag and transaction storage compared to the ImproX IC Controller, and is therefore used in larger IXP400 systems.

The unit is capable of communicating with ImproX Terminals via an RS485 Terminal Bus Port, and with a PC or with other IC or AC Controllers via an RS485 Host Bus Port.

APPLICATIONS

Typical applications for the ImproX AC unit include the following:

- Access control.
- Time and attendance monitoring.
- Job costing.



FEATURES

The unit provides the following features:

- LEDs indicate transmit and receive line activity for diagnostics.
- A real-time clock.
- Remote firmware download capability.
- An RS485 Host Bus Port for connection to a PC, and to other ImproX AC or IC units.
- An RS485 Terminal Bus Port for connection of other ImproX Terminal devices.
- Operation from power inputs in the range 10V to 30V DC.
- Capable of storing 30000 tags and 30000 transactions as standard with the ability to upgrade to 160000 tags and 160000 transactions.
- Dynamically allocated memory, e.g. if only 1000 tags, then a fully populated memory would hold up to 566000 transactions.
- Liquid crystal display (LCD) interface for system monitoring [the LCD is an optional extra].
- Robust, aluminium enclosure (XAC904-1-0-GB-XX).

SPECIFICATIONS

PHYSICAL SPECIFICATIONS

Model XAC900-0-0-GB-XX

Dimensions	L = 128 mm (5.04").
	W = 106 mm (4.17").
	H = 45 mm (1.77").
Mass	175 g. (6.17 oz).

MODEL XAC904-0-0-GB-XX

Dimensions	L=165 mm (6.49").
	W=195 mm (7.67").
	H = 88 mm (3.46").
Mass	1.190 kg (2.62lb).
Housing material	Aluminium.
Colour	Black.

ENVIRONMENTAL SPECIFICATIONS

Temperature

Without XAC903-0-0-GB-XX
 LCD Display Module fitted:

Operating	-25°C to +60°C (-13°F to +140°F).
Storage	-40°C to +80°C (-40°F to +176°F).

With XAC903-0-0-GB-XX LCD
 Display Module fitted:

Operating	0°C to +50°C (+32°F to +122°F).
Storage	-10°C to +60°C (-14°F to +140°F).

Humidity range 0 to 95% relative humidity at +40°C (+104°F) non-condensing.

EMC	EN55024.
Radiated and conducted emissions	EN55022 Class B.
Electrostatic discharge	EN61000-4-2.
Electrical fast transients	EN61000-4-4.
Surge immunity	EN61000-4-5.
Voltage dips and interruptions	EN61000-4-11.
Radiated susceptibility	EN61000-4-3.
Conducted susceptibility	EN61000-4-6.
Dust and splash resistance	Indoor Unit.
Drop endurance	2m drop (in packaging).

ELECTRICAL SPECIFICATIONS

Power Requirements

10 V to 30 V DC @ 80mA.

Power Input Protection Reverse polarity protection on DC power inputs, over-current protection and over-voltage protection.

Permissible Input Supply Ripple Voltage (maximum) 1 V_{PP} at 50 Hz.

Anti-Tamper Protection Internal switch (XAC904-1-0-GB-XX only).

Memory

RAM (non-volatile) 2 MBytes standard, 8 MBytes maximum.

Flash ROM	128 Kbytes.
Battery Backup (for RAM)	Battery type: 1 x 3.0 V CR2032 Expected battery life with power off: 2 years.
Terminal Bus Port	
Electrical Interface	RS485, ASCII with 16-bit CRC checking.
Communications protocol	ImproX Secure Communications Protocol.
Data format	8 data bits, no parity, 1 stop bit.
Baud rate	1 200, 2 400, 4 800, 9 600, 19 200, 28 800, 38 400, 57 600 and 76 800 selectable via the protocol.
Default mode	Receive mode.
Line Termination	Provision is made for line termination.
Host Bus Port (Port 2 On PCB)	
Electrical interface	RS485, ASCII with 16-bit CRC checking.
Communications protocol	ImproX Secure Communications Protocol.
Data format	8 data bits, no parity, 1 stop bit.
Baud rates	1 200, 2 400, 4 800, 9 600, 19 200, 28 800, 38 400, and 57 600, selectable via the communications protocol.
Default mode	Receive mode.
Line Termination	Provision is made for line termination.
Unit Status	Slave.
Test Modes	
Power-On Self-test	RAM, Flash-ROM, RTC.

OPERATOR INTERFACES

(XAC904-0-0-GB-XX fitted with the Display Cover XAC903-0-0-GB-XX as optional extra)

Liquid Crystal Display (LCD)	
Characters	16 characters x 4 lines.
Character Sets	English, Katakana.
Contrast	Preset.
Back-lighting	Turned on and off via the communications protocol.
Status Indicators	
Power on indicator	Red LED (internal to the unit).
Incoming RS485 Data	Green LED (flashing) (internal to the unit).
Outgoing RS485 Data	Red LED (flashing) (internal to the unit).



INTERNATIONAL STANDARDS

The ImproX AC unit complies with the requirements of the following international standards where applicable:

EIA RS-485	Standard for Electrical Characteristics of Generators and Receivers for use in Balanced Digital Multipoint Systems.
EN 55024	Limits and Methods of Measurement of Radio Disturbance Characteristics of Information Technology Equipment.
IE6 1000-4-1	Electromagnetic Compatibility (EMC). Part 4: Testing and Measurement Techniques. Section 1: Overview of Immunity Tests. Basic EMC Publication.
IE6 1000-4-2	Electromagnetic Compatibility (EMC). Part 4: Testing and Measurement Techniques. Section 2: Electrostatic Discharge Immunity Test. Basic EMC Publication.
IE6 1000-4-4	Electromagnetic Compatibility (EMC). Part 4: Testing and Measurement Techniques. Section 4: Electrical Fast Transients / Bursts. Basic EMC Publication.
IE6 1000-4-3	Electromagnetic Compatibility (EMC). Part 4: Testing and Measurement Techniques. Section 3: Radiated, Radio Frequency, Electromagnetic Field Immunity Test
IE6 1000-4-6	Conducted Susceptibility.
IE6 1000-4-5	Surge Immunity.
IE6 1000-4-11	Voltage Dips and Interruptions.

APPROVALS

CE approved.

TAMPER PROOFING (XAC904-1-0-GB-XX)

An internal switch detects when the lid is opened on the unit. This event detection is reported by the Controller via the protocol.

RELATED IMPRO PRODUCTS

The ImproX AC Controller is designed to be used in conjunction with other units in the ImproX range, and with the ImproX IL Computer in OEM applications, or with a Host PC and the **ImproNet IXP300/400**® Access Control Software Suite.

ORDERING INFORMATION

The ImproX AC and optional extras can be ordered under the following codes:

- XAC900-0-0-GB-XX (Motherboard only).
- XAC902-0-0-GB-XX (Memory Module).
- XAC903-0-0-GB-XX (LCD Display Module).
- XAC904-0-0-GB-XX (Aluminum Enclosure).



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MODEL NUMBER: XAC900-1-0-GB-XX
XAC904-1-0-GB-XX
